BAYFRONT BY-LINE

Spring 2003

SEA MONKEYS by John Lopez

Children of the sixties who spent time reading comic books will remember the advertisements in the back pages selling diminutive aquatic creatures called Sea Monkeys. For a small price a child could "send away" for Sea Monkey eggs, a tiny aquarium to hatch them in, food, and sea salt to mix with tap water to make a briny hatching solution.

The Sea Monkey, or common brine shrimp, (*Artemia sp.*), belongs to the phylum Arthropoda, class Crustacea. Artemia are zooplankton like copepods and daphnia.

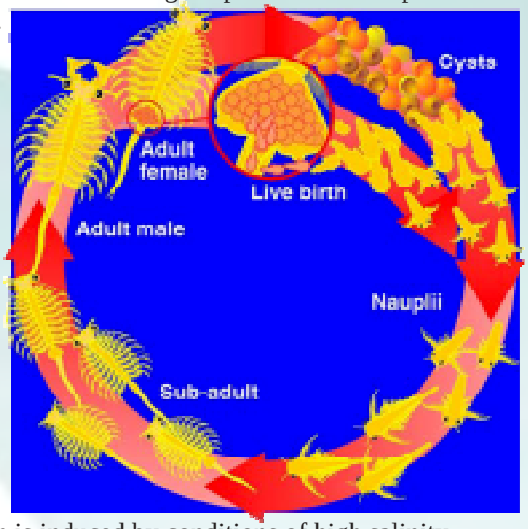
The salinity of natural seawater is about 3.5 percent. Brine shrimp thrive in salt evaporation ponds where the salinity is high (approximately 5 percent), up to the point at which salt crystallizes (more than 28 percent). This is high enough to exclude fish predators. However, recent research has shown that the Artemia life cycle can be completed only in a narrower range (5 to 20 percent) of salinity.

Because they are filter-feeders and continuously remove algae and debris from the water, brine shrimp enhance water clarity, which allows more light to be absorbed by the dark pond bottoms, increasing the evaporation rate of water and efficiency of salt extraction. The presence of brine shrimp is so desirable that if they are not already present, they are usually introduced into the ponds.

After 15 to 20 hours at 77° F, egg cysts burst open and the embryo leaves the shell. For the first few hours, the embryo hangs beneath the cyst shell, still enclosed in a hatching membrane. This is called the "umbrella" stage, and during this stage, the nauplius (larva) completes its development and emerges as a free-swimming creature. In the first larval stage, the nauplius is a brownish-orange color because of its yolk reserves. Newly-hatched Artemia do not feed because the mouth and anus are not fully developed.

Approximately 12 hours after hatching, the juvenile brine shrimp molt into the second larval stage and they start filter-feeding on particles of various microalgae, bacteria, and detritus. The nauplii will grow and progress through 15 molts before reaching adulthood in about 8 days. Adult Artemia are about 8 mm long, but can reach lengths up to 20 mm in the right environment. From the nauplius stage, an adult Artemia increases 20 times in length, and 500 times in biomass.

In low salinity and optimal food levels, fertilized females usually produce free-swimming nauplii at a rate of up to 75 nauplii per day. They will produce 10-11 broods over an average life cycle of 50 days. Under super-ideal conditions, an adult Artemia can live as long as three months and produce up to 300 egg cysts every 4 days. Cyst production is induced by conditions of high salinity, chronic food shortages and/or cyclic oxygen stress.



When kept under proper conditions, egg cysts can have an extremely long dormancy period and remain viable. At the Great Salt Lake in Utah, drilled core strata samples dated at 10,000 years were found to contain dormant egg cysts. They were placed in a hatching medium, aerated, and produced living nauplii!

In aquaculture, Artemia are easily-produced as live food for a variety of invertebrates and fishes. Dehydrated cysts of Artemia are the most widely used and important product for aqua-culturalists. Artemia are even used as food by some ethnic groups in Africa.

At the Nature Center, aquarium brine shrimp are used primarily to feed moon jellies and their polyps, bay pipefish, and other small fish and invertebrates. They are relatively easy to raise and harvest and at one time were considered to be an economical food for aquaria. Today's market, supply and demand, and climate changes (such as an El Niño winter) have driven prices for egg cysts over a hundred dollars per pound depending on the quality, the harvest location, and the vendor.

CHULA VISTA NATURE CENTER

Inside this issue:

WHAT'S IN A NAME?

Part II

Barbara Coffin Moore, Programs Manager

In the last issue (January 2003) of the Byline, we explored the lives of some of the pioneer naturalists for whom many of our plants and animals are named. All of these people were adventurers and interested in finding out more about the large country we all live in. We continue to explore in this issue.

Alexander Wilson (1766-1813), known as the "Father of American Ornithology", was born in Scotland. After landing in jail for libel, this young poet came to Pennsylvania to teach in 1794. He became interested in birds and traveled throughout the eastern states, meticulously describing the birds, their range and habitat. Wilson published a nine-volume *American Ornithology* between 1808 and 1814. Before his entire work was completed, he died of dysentery contracted while swimming a river searching for a bird. In his *Ornithology,* Wilson described 56 American species as new, 40 of which still stand today. A storm-petrel, a plover, and a warbler were named for him. We see Wilson's Warbler (*Wilsonia pusilla*) at the Nature Center during the breeding season in spring.

Johann Reinhold Forster (1729-1798) accompanied Captain Cook on his voyage around the world in 1772. He wrote a treatise on the birds of Hudson Bay. His writing so impressed other ornithologists that the West's most common and second smallest tern, Forster's (*Sterna forsteri*), was named for him, although he never visited North America. Many people leave out the "r" in Forster's and mispronounce this beautiful tern's name as "Foster's".

The English nature illustrator, William Swainson (1789-1855), spent two years as a young man travelling in Brazil before returning to England with a collection of 760 bird skins, including hummingbirds, 20,000 insects, and many drawings of Brazilian wildlife. He never visited North America, but collaborated with John Richardson on *The Zoology of the Northern Parts of British America*. He constantly quarreled with his contemporaries, many of whom thought he was a good illustrator, but not such a good naturalist. In 1840, Swainson published a book, *Taxidermy with the Biographies of Zoologists,* in which he gave himself the longest entry of 14 pages, plus his portrait as the frontispiece (Audubon received only one page and was cited as an illustrator). The Swainson's Hawk (*Buteo swansoni)* was named for him.

Often seen in hot pursuit of small birds, the Cooper's Hawk (*Accipiter cooperii*) was named for William Cooper (1798-1864), a prominent New York naturalist and one of the founders of the New York Lyceum of Natural History. Cooper collected the Cooper's Hawk specimens that Charles Bonaparte, nephew of Napoleon, described for a supplement to Wilson's *American Ornithology*. (Cooper was the father of Dr. James Cooper, a noted California ornithologist who wrote *The Ornithology of California*, and for whom the Cooper Ornithological Society was named.)

Hummingbirds are often seen nectaring from Crimson Sage (*Salvia greggi)* which grows abundantly in the Nature Center's gardens and was named for Josiah Gregg (1806-1850). Gregg came to the Southwest in the 1830's for health reasons. He recovered and became a trader, making trips between Independence, Missouri, and Santa Fe, New Mexico, and sometimes to Chihuahua, Mexico. He published a book called *Commerce of the Prairies* in 1844 (six editions in English and three in German). On a trip to California in 1850, Gregg and his companions suffered from hunger and exposure. He fell from his horse in a weakened condition and died at the age of 44.

Continued on page 5

CHULA VISTA NATURE CENTER SPECIAL EVENTS

NATURE DISCOVERY WALKS

For events requiring reservations call (619) 409-5903.

Gone Birding! 8:00 AM, 1st, 2nd and 3rd Saturdays

Bird Walks at Sweetwater Marsh National Wildlife Refuge. Join the Chula Vista Nature Center's staff and volunteers in search of some of the 220 species of birds found here. FREE. Call for reservations.

Gone Birding! 11:00 AM Sundays. Take the Shuttle in and meet outside the entrance of the Nature Center.

Ven Explora la Naturaleza con Migo!
1:00 PM, 1st Sunday

This bilingual nature walk, led by a Spanish speaking docent, will introduce visitors to the wonders of the marsh and refuges.

A Second Look! 2:00 PM, Wednesday, Saturday and Sunday

Take a look behind the scenes at the Chula Vista Nature Center, Gunpowder Point and the Sweetwater Marsh National Wildlife Refuge.

Trekking the Refuges, 8:30 AM, 4th Saturday

Get to know San Diego's other National Wildlife Refuges. Each month we will visit a different location to view migratory birds, wildflowers and special features of the Tijuana Slough and South San Diego Bay in Imperial Beach, and Otay Sweetwater in Rancho San Diego. FREE. Call for reservations and directions to locations.

FRIDAYS WITH MURRAY

by Amanda Cassady, Nature Center Volunteer

Murray, the Mudflat Octopus, was already annoyed with me for interrupting his "sit-in-my-rock-hole-and-stare-at-stuff" time by scrubbing his tank one Wednesday. As my brush invaded his territory, he turned a very dark purple, his head inflated and deflated, and his eyes changed from light to dark like he was about to shoot laser beams and attack.

Friday, when I began to feed him, he immediately came out of his hole and started to slowly climb the side of his tank like he always does. He knows the top is coming off his tank when I come, and he always has plans to escape.

I was thinking to myself, as I dug around for a small squid bit to act as decoy, "How does he know he's in an aquarium and what does he see out here that he wants?" I barely opened the *left* side of his tank, out-smarting the little invertebrate climbing up on the *right.* I dropped in a small piece of squid, still contemplating Murray's desire to flee. The squid fell to the left and was supposed to distract him so I could drop a bigger squid bit for him to eat.

My right hand was resting on the edge of his tank while I looked down to find another piece of squid. Suddenly I felt something touch the back of my hand. It happened fast! I looked and Murray had two tentacles holding my hand against the tank. I freaked out! I jerked my hand away and could only stare at him because I was paralyzed with fear.

Then Murray started to climb out! I just watched because I couldn't even think - I was in shock. His head and arms came over the edge of the tank, teetering there. Then his head was out of the water contemplating his next move. I shrieked to the Aquarist that the octopus was out.

Murray flung himself over the lip and fell on top of the table; I nearly died. John Lopez came to the rescue and said, "You did the right thing." I thought, "What, freak out?"

John began to pick up Murray and put him back in his tank. Murray is not big; wadded-up, he easily fits in a man's hands when cupped together. He fell onto a smooth surface, so there wasn't anything he could wrap a tentacle around to hold onto, but it was almost impossible for John to pick him up. His suckers are strong! John wrestled with him for 10 minutes and was worried he would die; Murray can't breathe out of the water. Every now and then, John would get a good grip and pull and we'd hear a sound like bubble wrap bubbles popping - the sound of his tentacles coming free.

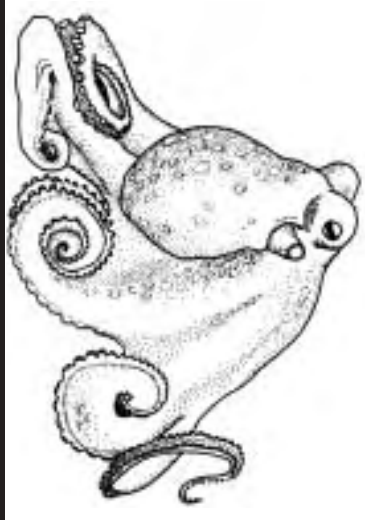
John finally got him free and put him in his tank and the water immediately turned black. He inked everywhere; he can't do that out of water. It looked creepy and John had to siphon some of the water from his tank.

For the rest of the day, I fought an onset of anxiety and "post-traumatic stress disorder" and was easily startled. For a long time, I could feel the two places where his tentacles had grabbed my hand. Eeewww! An octopus touched me! I guess neither of us were any worse for the wear though.

MUD-FLAT OR TWO-SPOTTED OCTOPUS

Octopus bimaculoides

HABITAT: Found in protected holes and crevices in middle and low intertidal zones, also on mudflats. Nature Center *octopods* (the preferred plural) are usually caught by fishermen on or near pier pilings.
APPEARANCE: At sexual maturity, the dorsal mantle length is 2-8 inches (5-20 cm). Its pear-shaped body is variable in color, the upper surface is generally dark gray, brown, red, or olive mottled with black, and the lower surface is lighter. Blue/black eyelike spots are conspicuous below each eye. The skin is sculptured, with abundant skin flaps. Adult males have one or two specialized, enlarged suckers on arms 2 and 3.



RANGE: San Simeon, California and Channel Islands to Ensenada, Baja California.
REPRODUCTION: From late winter to early summer, females deposit eggs (which look like grains of rice) under rocks. The eggs are brooded continuously for 2-4 months until they hatch, after which the female dies. The young remain on the bottom after hatching, often moving into the intertidal zone.
DIET: Adults feed on mollusks, crustaceans, and occasionally, fish. Toxic secretions of the salivary glands are used to paralyze prey. In the case of shelled mollusks, the poison is injected through a small hole rasped in the shell by the *radula*, the toothed tongue.
INTERESTING FACTS: A similar species, *Octopus bimaculatus*, also called the Two-spotted Octopus, lives slightly farther off shore from the lowest intertidal zone where the brown alga, *Laminaria sp.*, occurs to depths of 60 feet (50 m). Its range is from Santa Barbara and the Channel Islands, to the southern tip of Baja California, and in the Gulf of California from San Felipe to La Paz, with intertidal specimens being most common in the southern part. The two species are so similar that for more than 60 years the Two-spotted Octopus was thought to represent a single species.

IN AND AROUND THE GARDEN

David DiDonato
Nature Center Gardener

April will mark the 1st anniversary of our joint effort with the Chula Vista Garden Club. In this past year they have donated close to one hundred new plants that have been placed throughout the gardens. This donation was made possible by a grant from the Shell Oil Company Foundation, in their dedication to make a difference in their community.

The front of the main building has received a facelift. The saltbush was removed and replaced with a variety of native plants. More plants were added to the butterfly and hummingbird garden, the driveway circle, along the front sidewalk, and in front of the Nature Center itself. We thank Marion and Tom Beecroft, Betsy Cory, and the many other volunteers who made this possible. We are also grateful to Marion and Tom for tirelessly making several trips to Las Pilitas Nursery in pursuit of the native plants.

In addition to the landscaping changes out front, we are looking forward to diversifying our educational scope to include waste management, recycling, and earth-friendly landscape and garden practices. The herb garden area will be changed into an interpretive composting exhibit/training facility.

It is our intent to build a permanent exhibit that will serve to educate casual visitors, as well as providing an interactive venue for conducting Master Composter classes and home composting workshops. There will be signs to inform and educate visitors on every aspect of composting, including active, passive, and Vermicompost methods. June is the goal for completion of this project. I am truly excited to add this new element of conservation to the Nature Center's educational program. We are set to become the epicenter of composting for the entire South Bay!

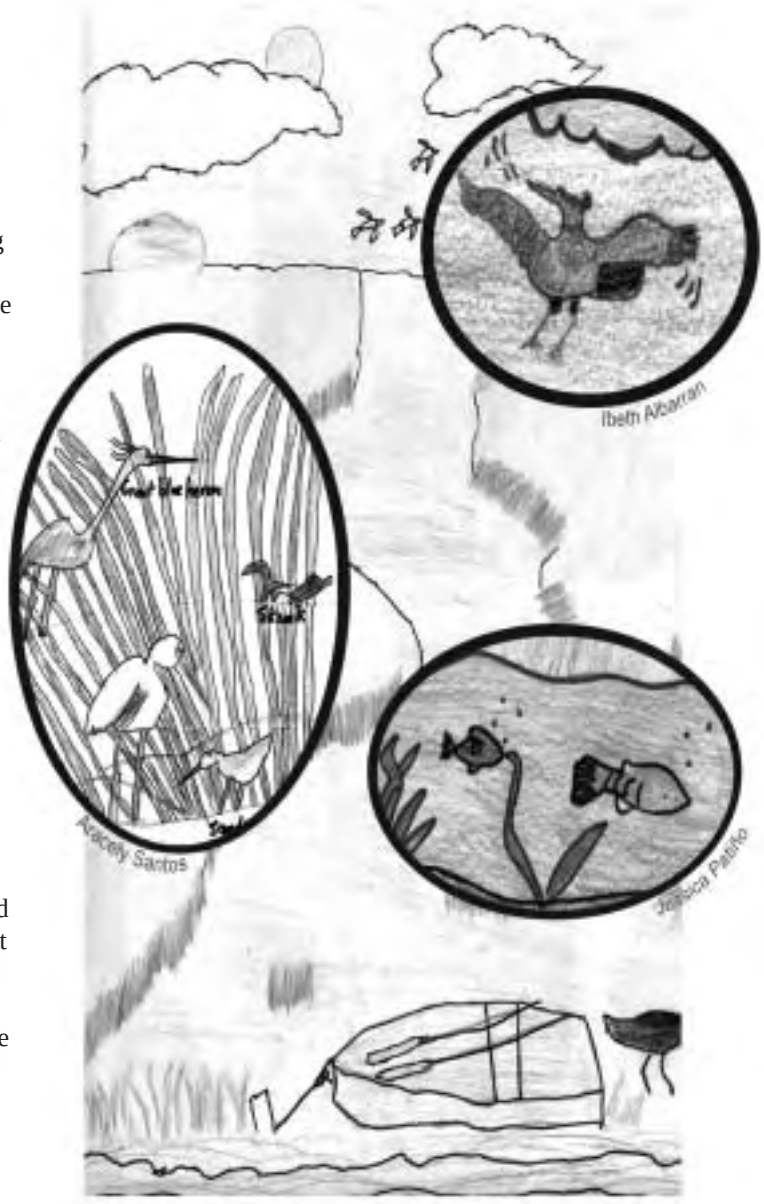
Lyn Conley Remembered

Last December, we lost a truly dedicated garden volunteer, Lyn Conley. For the last 5 years, Lyn provided us with a tremendous amount of support. She volunteered two days a week watering, pruning, collecting seeds, and transplanting seedlings. Always willing to help out, she even took some seeds home to sprout. We would often have conversations about family, school, and her latest adventure. She always had a smile on her face and never had a negative comment. We will always picture her with a volunteer apron, straw hat, and pruning scissors in hand. We will surely miss her.

ESTUARY ADVENTURES

Joy Moorhead, Science Teacher
Chula Vista Elementary School District

As a follow-up to their study trip at the Nature Center, third grade students in Mr. Salazar's class from Harborside School captured their memories in artwork. The young visitors drew pictures of their favorite scenes from the day. An abandoned rowboat captured the imagination of several students. Other young artists drew the aquatic animals they observed on the trip. Still others were impressed by the birds, which inhabit the salt marsh. It is fascinating to view a study trip through the eyes of the student. The artwork is a reminder that each child's experience at the Nature Center is unique. Thank you Mr. Salazar's class for sharing your impressions with us!



LOTS OF BUZZING AROUND

Joyce Remp
Assistant Curator of Birds

You may have noticed something new on the east observation deck. We have put up hummingbird feeders so that our guests can enjoy an up-close and personal glimpse of these amazing birds.

Hummingbirds form the largest family (*Trochilidae*) of birds in North America, with approximately 338 species. They are the smallest birds known to man with weight ranges from .1 to .3 ounces. Most hummers migrate as far north as Alaska and as far south as Teirra del Fuego in South America, where over half of the species are found. We have 5 species in San Diego County, and some stay year round. The most common hummingbirds found at the Chula Vista Nature Center are Costa's and Anna's hummingbirds.

The primary food source for hummers is nectar, which is easily digested and quickly converted into energy. However, insects are also a large part of their diet, providing essential proteins, vitamins and fat. They will eat almost any insect that can fit into their mouths! Being nectar feeders, they play an important role in the pollination process.

Hummingbirds are highly-territorial during mating season and can be very aggressive. The male will mate with several females. Once mating has occurred, without the help of the male, the female will build the nest, gathering soft, downy materials to weave together with spider webs and cocoon down. She will lay 2 eggs and incubate them for 15-22 days. After the eggs have hatched, she will brood and feed the young for another 2-3 weeks.

Hummingbirds do have a few natural predators; orioles, kestrels, jays, roadrunners, and crows will attack the young, inexperienced juveniles. Ants and preying mantis' can attack the young at the nest site. Domestic cats injure or kill a large percentage of hummers. Many also die from head or wing trauma after flying into windows.

Hummingbirds have many specializations for their lifestyle as the world's smallest birds. The hummingbird's flight is amazing! They have the ability to fly forward, backward, to the right or left, hover motionless, change directions in a heartbeat, and even fly upside-down! They maneuver very quickly – attaining speeds of 30 mph, they reach great heights, and are able to dive at an amazing 60 mph!

The tongue is specially adapted for retrieving nectar from flowers, and can be extended far beyond the beak. It is long and slender with grooves, attached by small bones, and connected by muscles to the back of the skull, which controls the extension.

Most of the time, hummers maintain their body temperatures at 104˚–111˚ F, which consumes a tremendous amount of energy. Since they are unable to forage for food during the night, a special adaptation allows them to suspend body functions, which lowers their metabolism. This is known as "torpor".

DID YOU KNOW?

· Some hummingbird species will migrate over 2,700 miles with a non-stop flight of 500 miles over the Gulf of Mexico.
· Hummingbirds can flap their wings up to 80 beats per second.
· They have the largest heart of any animal compared to its body size and their heart rate can be up to 1,260 beats per minute!
· Hummingbirds will visit flowers up to 1,000 times a day just to gather enough nectar to maintain their metabolism.
· They can expend 6,660 to 12,400 calories per day.
· No other bird possesses such a wide spectrum and variety of breathtaking colors; they are truly the "jewels of nature".
· It is not necessary to buy commercial hummingbird nectar or to have the nectar red. In fact, the dyes have been found to be harmful to the birds. It is very easy to make your own nectar, just add 1 cup of sugar to 4 cups of water, bring to a boil, let cool and fill your feeders. Then sit back and enjoy these amazing birds!

What's in a name? (Continued from page 2)

A favorite food for terns and egrets is the Long-jawed Mudsucker (*Gillichthys mirabilis).* This little goby, which is usually on display in the Nature Center's galleria, is highly prized as bait, with 14,000 pounds taken and sold each year. *Gillichthys* was named for Theodore Gill (1837-1914), an eminent American ichthyologist and professor of zoology at George Washington University. He was also associated with the Smithsonian for over 50 years. While he produced over 500 scientific papers about birds, mammals, mollusks, and fishes in his long career, his most influential work was his classification of fishes in 1872, which formed the basis for the arrangement of the Smithsonian's fish collection. Gill was interested in the relationships among animals and in constructing classifications, rather than straight descriptions that other naturalists were doing. Towards the end of his life, he lived quietly while contributing to encyclopedias and other sources of public information until his death. (By the way, *mirabilis* means wonderful.)

There are so many more of these intrepid pioneer naturalists who risked their lives to create a documented North American natural history. If you want to know more, find *Pioneer Naturalists* by Howard Ensign Evans. It's a good read!

THE INCREDIBLE EGG

Charles Gailband, Curator of Birds

With spring just around the corner, many resident breeding birds will start preparing their nests for the eggs they will lay. As we approach this annual time of renewal and nesting, I can't help but reflect on the amazing structure/function and variety of eggs in the avian world.

The production of eggs as a means to reproduce is a trait that is common in all birds. The number of eggs laid on a single nest can vary greatly. Some birds will lay as few as one egg, while others can lay many more. The Northern Bobwhite, a North American quail, holds the domestic record for number of eggs laid in a single clutch; as many as twenty-four eggs!

Regardless of the quantity or size of the egg(s) laid, they all share some important internal structures to permit embryonic development. The first, and most recognizable, physical trait of the bird egg is the **eggshell**. The strong, yet light, shell is always hard. This protects the developing embryo during incubation. Some animals, like reptiles, produce soft eggs.

Inside the egg, the **yolk** provides nutrition for the embryo/chick. The yolk is surrounded by clear fluids called **albumen,** which cushion the yolk and embryo. The yolk and embryo are anchored in place by a white structure called the **chalazae.** The chalazae holds the yolk in place while permitting it to rotate freely.

While the internal components of the avian egg are standard, the outer appearance can vary tremendously.

Eggs vary in shape, from round to ovular or elliptical. The difference in shape can be a function of the size/ skeletal structure of the hen producing the egg, or an adaptation to the nesting environment. Birds that lay round eggs, such as owls, often have bowl-type nest cavities with a lip that prevents eggs from rolling away when the incubating parent moves. Birds like gulls and seabirds, which nest on hard cliff ledges, have elliptical eggs. The tapered end of this shape restricts a rolling egg to a tight circle so the egg doesn't roll away.

Eggshell color is another trait that varies greatly. White or pale eggs usually are associated with nests that are found in cavities, underground, or otherwise covered. Birds that leave their eggs exposed for periods of time usually have strongly colored eggs to aid in camouflage. These eggs also tend to be speckled.

Eggs are a remarkable adaptation. They vary greatly from species to species, giving insight to nesting practices. The vast diversity in egg appearance is equaled only by variety found in the birds that lay them.

The white round Great Horned Owl egg is laid in a protected nest cavity where there is very little chance for the egg to roll away. *(right)*

The Common Murre egg is laid on narrow cliff ledges with out any nest structure. The elliptical shape helps prevent the egg from rolling away. *(left)*

STRICTLY FOR THE BIRDS

Helen Aprea, Bird Walk Leader and By-Line Staff Writer

We tend to think that all owls are nocturnal, but the small (9"-11"), long-legged, Burrowing Owl (*Speotyto cunicularia*) is mainly a diurnal feeder. It often hunts on foot for locusts, crickets, grasshoppers, birds, lizards, frogs, and small animals. The prey is swallowed whole and the indigestible parts (bones, feathers and fur) are regurgitated into tidy pellets. Their talons and feet are strong, and their hooked beak is typical of all owls. They have superb eyesight and hearing. Nocturnal owls have sound-deadening filaments at the tips of flight and contour feathers, but the Burrowing Owl does not.

Burrowing Owls live on farms (all owls help farmers by eating insects and rodents that destroy crops and vegetation), prairies, deserts, golf courses, dikes, airports, and grasslands. Most take over the abandoned burrows of ground squirrels or prairie dogs. The Florida variety is believed to dig its own burrows and tunnels, as there are no burrowing animals around. These underground homes protect the birds from enemies and the heat of the sun in open habitat. However, the young are quite vulnerable during times of flooding and can drown when trapped by the water.

During breeding season, small colonies are formed with one pair to a burrow. One owl of each pair usually stands guard outside the burrow during the day. They will fly around an intruder in a threatening manner. (To hear the various sounds the birds make to ward off danger, listen to the Burrowing Owl exhibit recordings at the Nature Center.)

They lay their eggs at the end of the burrow, which can be up to ten feet deep. Incubation starts as soon as the first egg is laid, and the size of the clutch varies with the food supply. Both sexes share the incubation, and both feed and defend the downy young.

Burrowing Owls are fairly common in some parts of North America. Two Caribbean Island species have been extinct since the late 1800's because mongeese were brought to the islands to rid them of snakes and these terrestrial owls could not survive against the introduced predators.

Thanks for Your Support!

Donations Received from November 15, 2002 - February 11, 2003

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In Memory of William Sharp

David & Gretchen Evans

CHULA VISTA NATURE CENTER LEGACY SOCIETY ESTABLISHED

At a recent meeting of the *Friends of the Chula Vista Nature Center,* the Board of Directors established the *Legacy Society*. The *Legacy Society* will be comprised of Nature Center supporters who believe in its mission and who leave a portion of their assets to strengthen the economic security of the Nature Center in perpetuity.

The *Legacy Society* will recognize Nature Center donors who pledge to benefit the "common good" through estate planning vehicles, bequests, and life insurance beneficiary designations. Estate planning options for supporters are numerous, including Charitable Lead or Remainder Trusts, Life Insurance plans, gifts by bequest, estate provisions, gifts of real estate, and others.

Individuals and couples joining the *Legacy Society* by December 31, 2003 will be forever designated as "Founding Members" and will be recognized on a special recognition plaque at the Nature Center. The *Friends of the Nature Center* urge all Nature Center supporters to consider their financial situations and the many benefits of estate giving vehicles including: income tax savings, avoiding capital gains on appreciated property, reduction of estate taxes and probate costs, and increasing current income. The amount of a supporter's intended gift will not be a criteron for joining the Legacy Society.

As the *Friends of the Chula Vista Nature Center* are concerned about the privacy of supporters who elect to join the Legacy Society, they have approved a confidential approach to donor information gathering and reporting. An independent attorney, Herb Young, will receive and retain financial information regarding all supporters' membership information in the *Legacy Society*. No Nature Center Board member or staff member will have access to this information. All *Legacy Society* members will correspond directly with Herb, who is providing his services *pro bono* for this important initiative.

More than 70% of Americans contribute to the nonprofit groups of their choice throughout their lifetimes, but only around 6% continue their support through a gift in their will, life insurance or planned giving vehicles. We know that many of the Nature Center's supporters value the Nature Center highly and would like to see its programs and services continue indefinitely. By joining the *Legacy Society*, you will help ensure effective programs and services are available for the many generations to come.

If you'd like to request a *Legacy Society* enrollment form, or if you have questions, please contact Roderick Reinhart, CFRE, Director of Fund Development and Strategic Planning for the City of Chula Vista, at (619) 691-5070.

SEARCH NO MORE

Have you visited the Nature Center Gift Shop lately? We now have the latest designs in nature and wildlife-theme fashion jewelry, including the new 2003 spring line of fine, unique jewelry and collectibles by Laurel Burch, Wild Bryde, and other popular wildlife jewelry designers.

We also have an expanded selection of the newest earrings, pins, rings, and pendants. From enamel hummingbird pins to gold seahorse earrings, the Gift Shop has the wildlife jewelry you've been searching for!

Accredited by the American Association of Museums

The Chula Vista Nature Center is accredited by the American Association of Museums, which certifies that this Museum continues to demonstrate a professional level of operation in accordance with the standards of excellence prescribed by the AAM.

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We ask individuals who require special accommodations to access, attend, and/or participate in a scheduled Nature Center activity to request such accommodations five days in advance of the activity. Please contact Program's Manager Barbara Moore at (619) 409-5903

CITY OF CHULA VISTA

Birds at the Coronados
Sunday, April 13th
9:00 AM - 4:00 PM
Call (619) 409-5903 for more information

Visit us at: www.ChulaVistaNatureCenter.org

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